Title (en)
SIMULATION METHOD AND APPARATUS FOR DETERMINING SUBSIDENCE IN A RESERVOIR

Title (de)
SIMULATIONSVERFAHREN UND -VORRICHTUNG ZUR BESTIMMUNG DER SENKUNG IN EINEM RESERVOIR

Title (fr)
PROCEDE ET DISPOSITIF DE SIMULATION PERMETTANT DE DETERMINER L'AFFAISSEMENT DANS UN RESERVOIR

Publication
EP 1756623 A1 20070228 (EN)

Application
EP 05740131 A 20050426

Priority
- US 2005014277 W 20050426
- US 83212904 A 20040426
- GB 0017227 A 20000714

Abstract (en)
[origin: US2004199329A1] A reservoir simulator first estimates rock displacement parameters (u, v, and w) representing rock movement in the x, y, and z directions. When the rock displacement parameters (u, v, w) are determined, "epsilonx,y,z" (the 'x,y,z elongation strains') and "gammaxy,yz,zx" (the 'shear strains') are determined since "epsilonx,y,z" and "gammaxy,yz,zx" are function of "u", "v", and "w" When "epsilonx,y,z" and "gammaxy,yz,zx" are determined, "sigmax,y,z" (the 'elastic normal rock stress in x,y,z directions') and "tauxy,yz,xz" (the 'elastic shear stress') are determined since "sigmax,y,z" and "tauxy,yz,xz" are a function of "epsilonx,y,z" and "gammaxy,yz,zx". When "sigmax,y,z" and "tauxy,yz,xz" are determined, the rock momentum balance differential equations can be solved, since these equations are a function of "sigmax,y,z" and "tauxy,yz,xz". When any residuals are substantially equal to zero, the estimated rock displacement parameters (u, v, and w) represent 'accurate rock displacement parameters' for the reservoir. When the rock momentum balance differential equations are solved, the rock displacement parameters (u, v, w), at an advanced time, are known. These rock displacement parameters (u, v, w) represent and characterize 'subsidence' in a seabed floor because subsidence results from rock movement; and rock movement results from withdrawal of oil or other hydrocarbon deposits or other fluids from an Earth formation. This 'abstract of the disclosure' is given for the sole purpose of allowing a patent searcher to easily determine the content of the disclosure in this application.

IPC 8 full level
G01V 11/00 (2006.01)

CPC (source: EP US)
G01V 11/00 (2013.01 - EP US)

Citation (search report)
See references of WO 2005106537A1

Cited by
CN110364066A

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
US 2004199329 A1 20041007; **US 7177764 B2 20070213**; CA 2565921 A1 20051110; EP 1756623 A1 20070228; MX PA06012422 A 20070911; NO 20065379 L 20070126; WO 2005106537 A1 20051110

DOCDB simple family (application)
US 83212904 A 20040426; CA 2565921 A 20050426; EP 05740131 A 20050426; MX PA06012422 A 20050426; NO 20065379 A 20061122; US 2005014277 W 20050426